

# **EXHIBIT A**



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**Cannon et al.**

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(54) **REUSABLE SWIM DIAPER**

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(\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 702 days.

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**A61F 13/15** (2006.01)  
**A61F 13/20** (2006.01)

(52) **U.S. Cl.** ..... **604/385.15**; 604/378

(58) **Field of Classification Search** ..... 604/393,  
604/385.15; 2/78.3, 237, 403, 404  
See application file for complete search history.

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iPlay® non-disposable swim diapers which "have a lightly absorbent inside layer with a snug-fitting waterproof Poly Lycra® outside layer," from Bambino Mountain website [www.bambinomountain.com/IP224.html](http://www.bambinomountain.com/IP224.html) (effective date unknown).

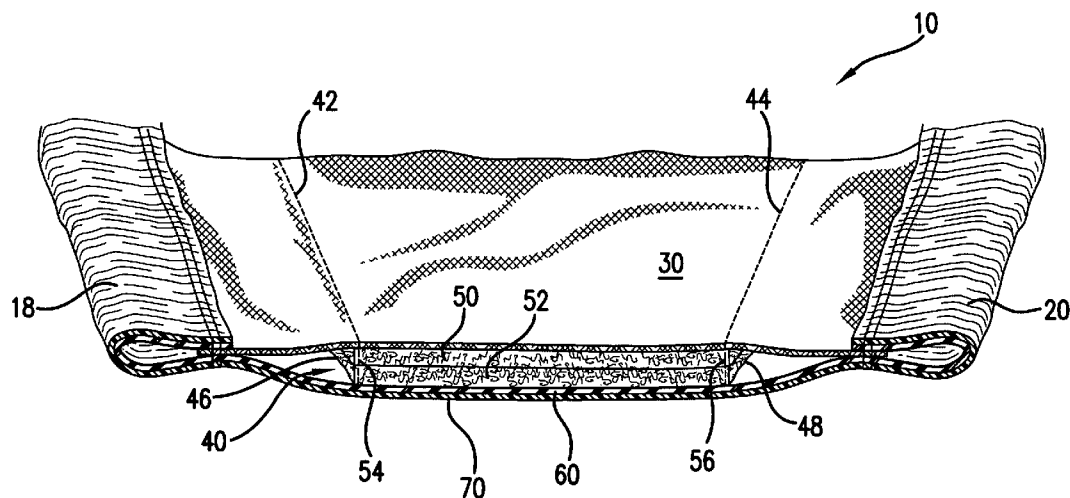
*Primary Examiner*—Melanie J Hand

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(57) **ABSTRACT**

A reusable swim diaper, which includes a main torso part having an extent defined by an elastic banded torso receiving aperture at its upper end for receiving a torso, a pair of elastic banded leg receiving apertures at its lower end, and a crotch portion generally between said leg receiving apertures. The main torso part includes a bodyside inner layer of breathable wick away fabric having an extent corresponding to the extent of the main torso part, an absorbent terry cloth intermediate layer, and a waterproof outer layer having an extent corresponding to the extent of said main torso part. The layers are made of materials which are capable of withstanding laundering and are restored to substantially their original conditions by laundering.

**19 Claims, 4 Drawing Sheets**



# US 7,678,094 B1

Page 2

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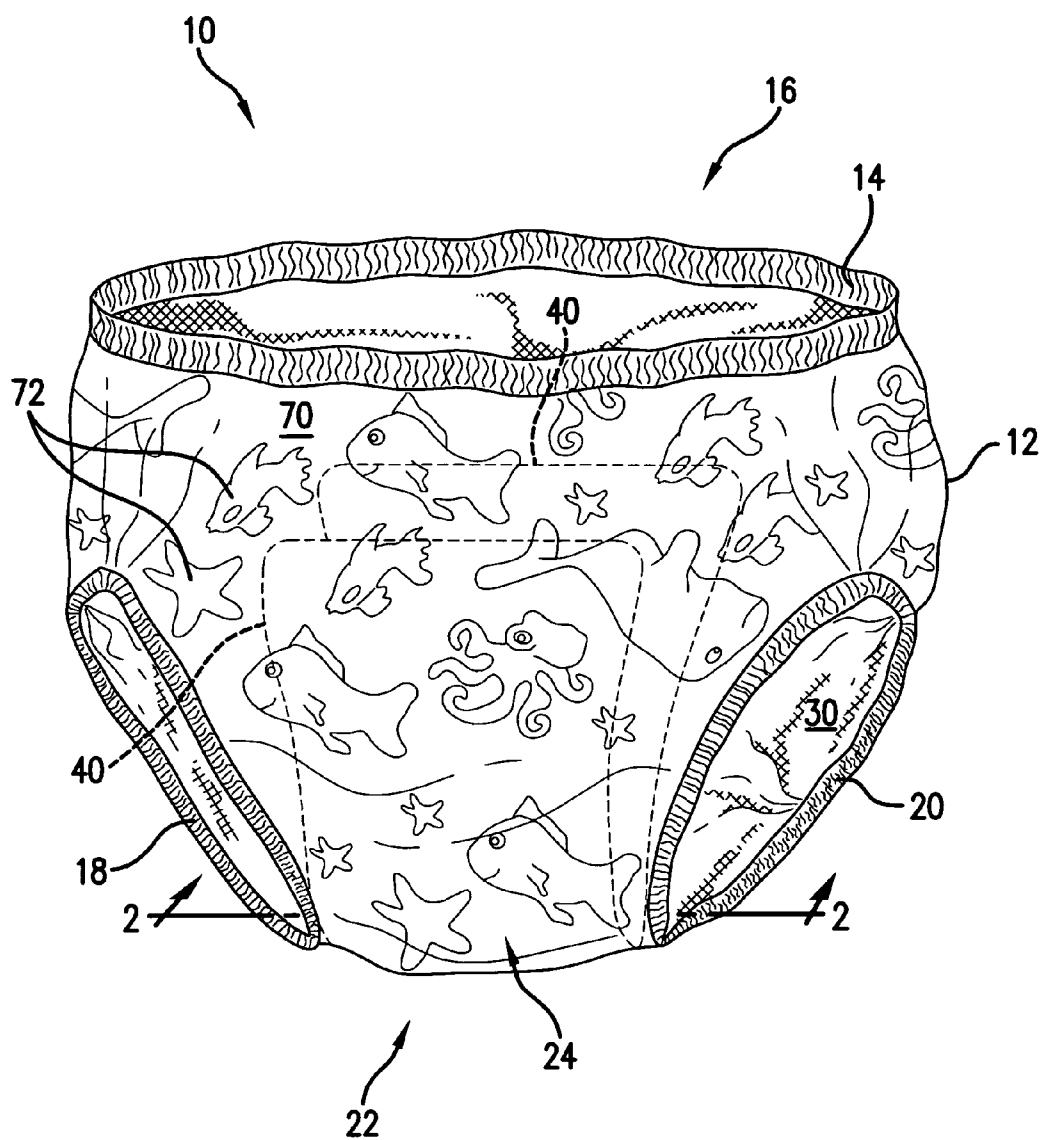


FIG. 1

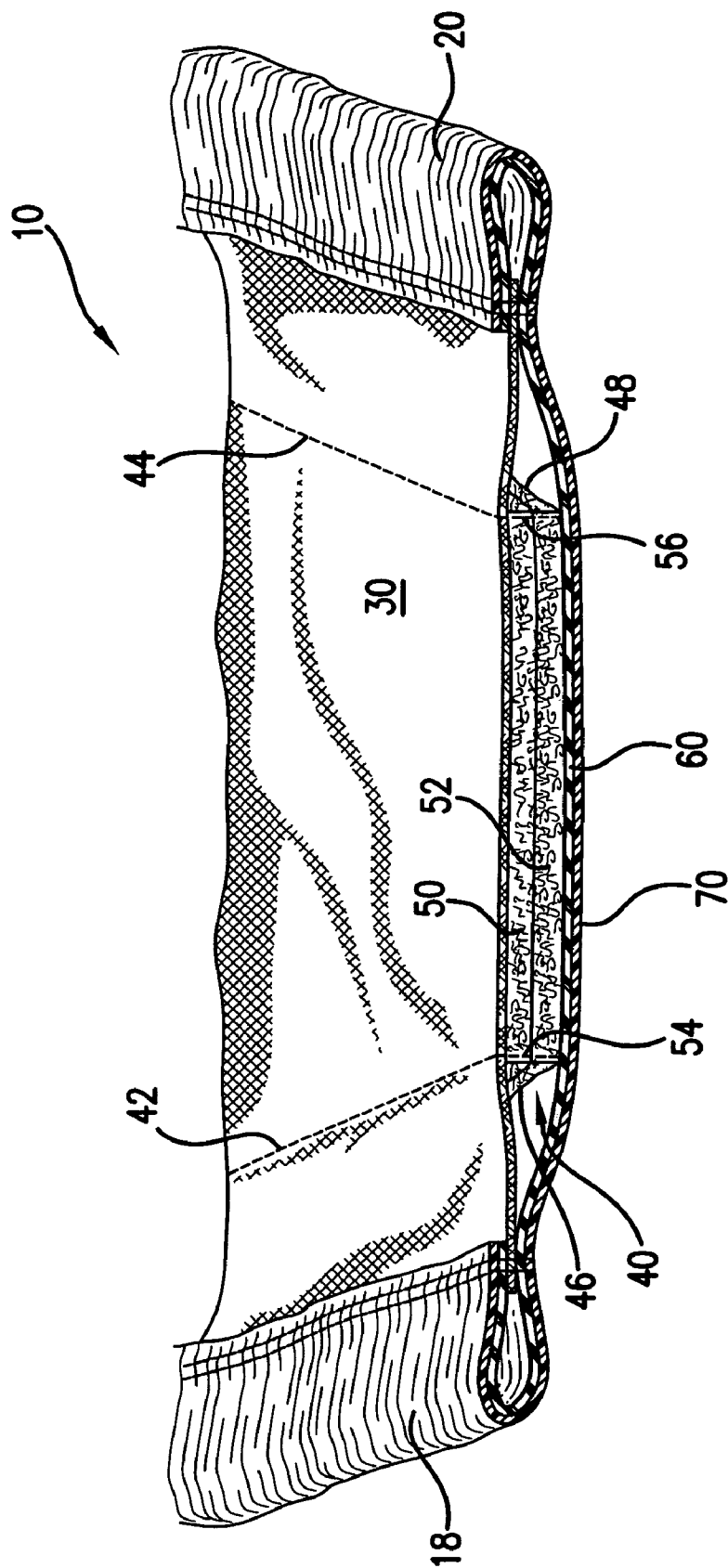


FIG. 2

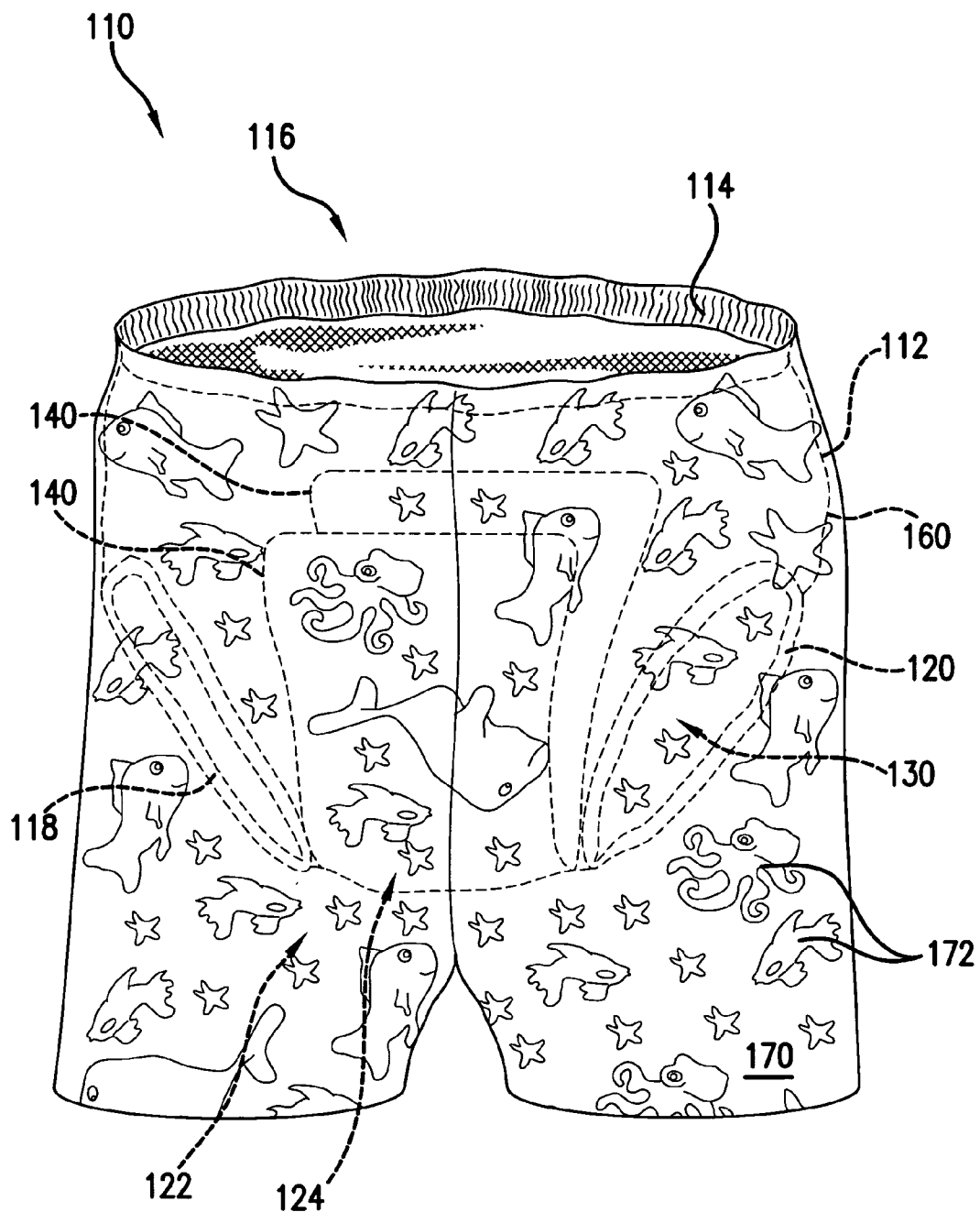


FIG.3

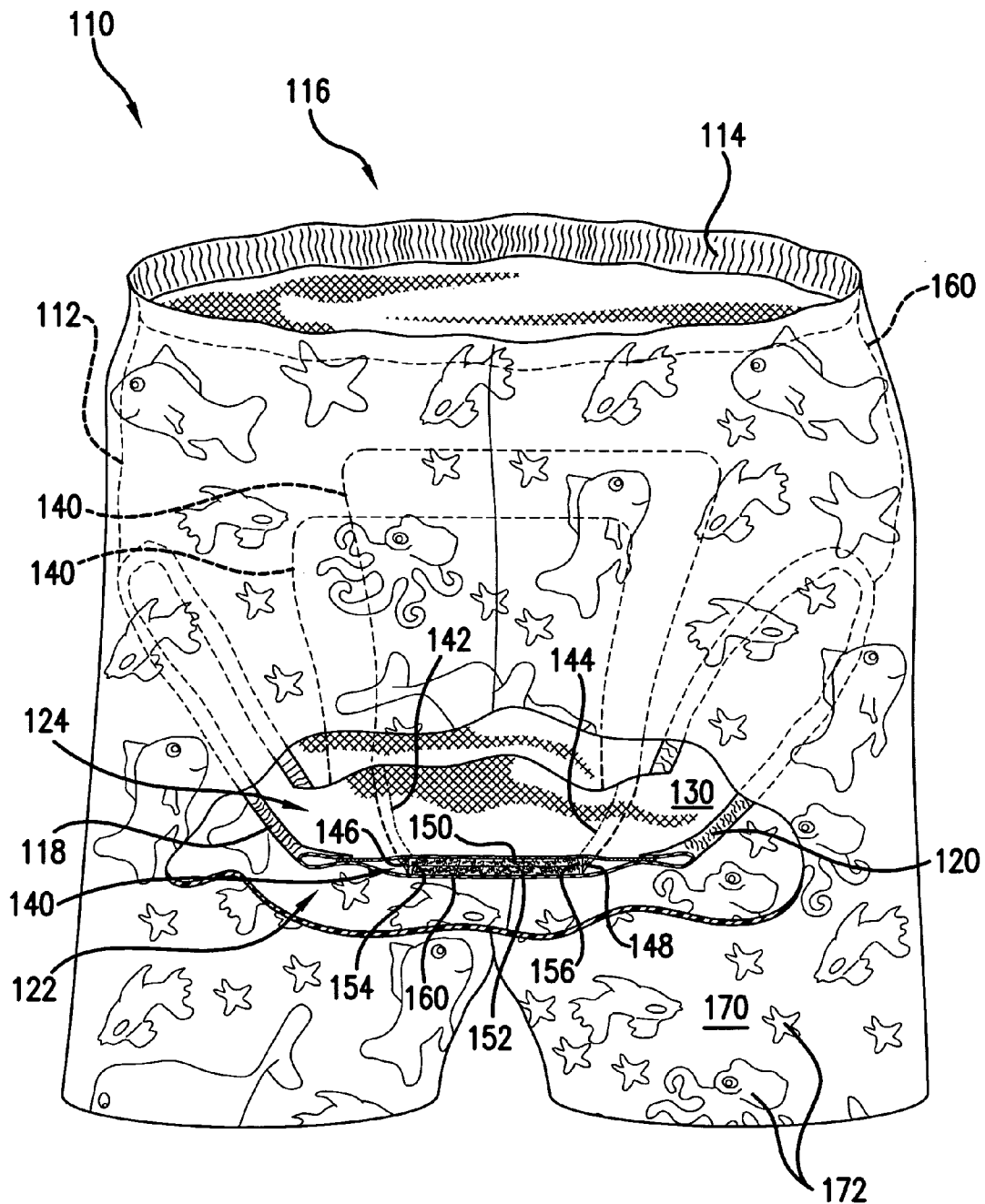


FIG. 4

1

**REUSABLE SWIM DIAPER****BACKGROUND OF THE INVENTION**

The invention relates to so-called waterproof swim di- 5  
pers, to be worn by infants and young children.

**SUMMARY OF THE INVENTION**

In one aspect, a reusable swim diaper is provided, which 10  
includes a main torso part having an extent defined by an elastic-banded torso-receiving aperture at its upper end for receiving a torso, a pair of elastic-banded leg-receiving aper-  
tures at its lower end, and a crotch portion generally between  
said leg receiving apertures. The main torso part includes a  
bodyside inner layer of breathable wick-away fabric having  
an extent corresponding to the extent of the main torso part, an  
absorbent terry cloth intermediate layer, and a waterproof  
outer layer having an extent corresponding to the extent of  
said main torso part. The layers are made of materials which 15  
are capable of withstanding laundering and are restored to  
substantially their original conditions by laundering.

In another aspect, a reusable swim diaper is provided,  
which includes a main torso part having an extent defined by  
an elastic-banded torso-receiving aperture at its upper end for  
receiving a torso, a pair of elastic-banded leg-receiving aper-  
tures at its lower end, and a crotch portion generally between  
said leg receiving apertures. The main torso part includes a  
bodyside inner layer of breathable wick-away fabric having  
an extent corresponding to the extent of the main torso part, an  
absorbent terry cloth intermediate layer comprising a poly-  
ester/polyamide fiber blend and having a fabric weight of  
approximately 640 g/m<sup>2</sup>, and a waterproof outer layer having  
an extent corresponding to the extent of said main torso part.  
The layers are made of materials which are capable of with-  
standing laundering and are restored to substantially their  
original conditions by laundering.

**BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a three-dimensional view of a first embodiment of  
a swim diaper embodying the invention;

FIG. 2 is a cross-sectional view taken on line 2-2 of FIG. 1;

FIG. 3 is a three-dimensional view of a second embodi- 45  
ment of a swim diaper embodying the invention; and

FIG. 4 is a three-dimensional view of the swim diaper of  
FIG. 3, partly cut away and partly in cross-section.

**DETAILED DESCRIPTION**

FIGS. 1 and 2 depict a swim diaper 10 of brief configura-  
tion embodying the invention. The swim diaper 10 includes a  
main torso part 12 having an extent defined by an elastic-  
banded torso-receiving aperture 14 at its upper end 16, and a  
pair of elastic-banded leg-receiving apertures 18 and 20 at its  
lower end 22. A crotch portion 24 is generally between the  
leg-receiving apertures 18 and 20.

The main torso part 12 is of multiple-layer construction,  
and includes a bodyside inner layer 30 of breathable wick- 60  
away fabric. A suitable breathable wick-away fabric is a knitted polyester fabric. The bodyside inner layer 30 has an extent  
corresponding to the extent of the main torso part 12 itself,  
and accordingly is also defined by the torso-receiving aper-  
ture 14 and the leg-receiving apertures 18 and 20. The bod- 65  
yside inner layer 30 is sewn at the edges of the apertures 14,  
18 and 20.

2

Adjacent the bodyside inner layer 30 is an absorbent ter-  
rycloth intermediate layer 40. In the embodiment of FIGS. 1  
and 2, the absorbent terrycloth intermediate layer 40 has an  
extent corresponding to the crotch portion 24 of the main  
torso part 12. A suitable material for the absorbent terrycloth  
intermediate layer 40 is a polyester/polyamide fiber blend.

It is important that the terrycloth intermediate layer 40 have  
sufficient absorbency to absorb an anticipated volume of  
urine. In the illustrated embodiment, the absorbent terrycloth  
intermediate layer has a fabric weight of approximately 640  
g/m<sup>2</sup>, and is approximately 7 cm×28 cm in size (if laid flat).  
The area of the absorbent terrycloth intermediate layer 40 is  
accordingly approximately 200 cm<sup>2</sup> (rounded up from 196  
cm<sup>2</sup>). The absorbent terrycloth intermediate layer 40 is sewn  
to the bodyside inner layer 30 along two stitching lines 42 and  
44 immediately adjacent lateral edges 46 and 48 of the inter-  
mediate layer 40.

Rather than a single layer having a fabric weight of  
approximately 640 g/m<sup>2</sup>, and particularly in view of the avail-  
ability of stock materials, the absorbent terrycloth intermedi-  
ate layer 40 takes the form of two sublayers 50 and 52, each  
having a fabric weight of approximately order of 320 g/m<sup>2</sup>.  
Stitches 54 and 56 extend through both sublayers 50 and 52,  
as well as through the bodyside inner layer 30.

Rather than a single layer having a fabric weight in the  
order of 640 g/m<sup>2</sup>, and particularly in view of the availability  
of stock materials, the absorbent terrycloth intermediate layer  
40 takes the form of two sublayers 50 and 52, each having a  
fabric weight in the order of 320 g/m<sup>2</sup>. Stitches 54 and 56  
30 extend through both sublayers 50 and 52, as well as through  
the bodyside inner layer 30.

Still referring to FIGS. 1 and 2, the main torso part 12  
additionally has a waterproof outer layer 60, which also has  
an extent corresponding to the extent of the main torso part  
12. The waterproof outer layer 60 is sewn at the edges of the  
torso-receiving aperture 14 and the leg-receiving apertures 18  
and 20. A suitable material for the waterproof outer layer 60  
is a coated woven nylon fabric. The waterproof outer layer 60,  
in combination with the elastic-banded apertures 14, 18 and  
20, serves to minimize the flow of liquids, such as urine and  
swimming pool water, between the inside and the outside of  
the swim diaper 10, particularly between the absorbent terry-  
cloth intermediate layer 40 and the outside environment.

For appearance purposes, the swim diaper 10 of FIGS. 1  
and 2 additionally includes a decorative fabric visible layer  
70, including representative decorative designs 72 printed  
thereon. The decorative fabric visible layer 70 can be of any  
suitable fabric, such as a nylon fabric. In the brief configura-  
tion embodiment 10 of FIGS. 1 and 2, the decorative fabric  
visible layer 70 has an extent corresponding to the extent of  
the main torso part 12, and is sewn to the main torso part 12  
at the edge of the torso-receiving aperture 14, as well as at the  
edges of the leg-receiving apertures.

Significantly, all of the layers, the bodyside inner layer 30,  
the absorbent terrycloth intermediate layer 40, the waterproof  
outer layer 60 and the decorative fabric visible layer 70 are  
made of materials which are capable of withstanding laun-  
dering, and are restored to substantially their original condi-  
tion by laundering. Thus, the swim diaper 10 is reusable, in  
contrast to disposable swim diapers. The swim diaper 10 is  
viewed as any other garment which is regularly laundered and  
worn again.

With reference now to FIGS. 3 and 4, another swim diaper  
110 embodying the invention is of boxer short configuration.  
The swim diaper 110 has a main torso part 112 which is of  
multiple-layer construction and basically identical to the  
main torso part 12 of the swim diaper of FIGS. 1 and 2. The



3

main torso part 112 in the swim diaper 110 of FIGS. 3 and 4 has an extent defined by an elastic-banded torso-receiving aperture 114 at its upper end 116, and a pair of elastic-banded leg-receiving apertures 118 and 120 at its lower end 122. A crotch portion 124 is generally between the leg-receiving apertures 118 and 120. A bodyside inner layer 130 of breathable wick-away fabric has an extent corresponding to the extent of the main torso part 120, is defined by a torso-receiving aperture 114 and the leg-receiving apertures 118 and 120, and is sewn at the edges of the apertures 114, 118 and 120. Adjacent the bodyside inner layer 130 is an absorbent terrycloth intermediate layer 140 having an extent corresponding to the crotch portion 124. The absorbent terrycloth intermediate layer 140 is sewn to the bodyside inner layer 130 along two stitching lines 142 and 144 immediately adjacent lateral edges 146 and 148 of the intermediate layer 140. The absorbent terrycloth intermediate layer 140 takes the particular form of two sublayers 150 and 152, and stitches 154 and 156 extend through both sublayers 150 and 152, as well as through the bodyside inner layer 130. The main torso part 112 additionally has a waterproof outer layer 160, which also has an extent corresponding to the extent of the main torso part 112. The waterproof outer layer 160 is sewn at the edges of the torso-receiving aperture 114 and the leg-receiving apertures 118 and 120. A suitable material for the waterproof outer layer 160 is a coated woven nylon fabric.

The swim diaper 110 of FIGS. 3 and 4 differs from the swim diaper 10 of FIGS. 1 and 2 in that a decorative fabric visible layer 170 has an extent greater than the extent of the main torso part 112, so as to extend partly down the legs of a wearer, in a boxer short configuration. Decorative designs 172 are printed on the decorative fabric visible layer 170. The decorative fabric visible layer 170 is sewn to the main torso part 112 only around the torso-receiving aperture 114, and hangs loosely. Accordingly, the swim diaper 110 of FIGS. 3 and 4 has the appearance of boxer-type swim trunks, but nevertheless serves the function of a swim diaper, in view of the main torso part 112 which includes the bodyside inner layer 130, the absorbent terrycloth intermediate layer 140, and the waterproof outer layer 160. The waterproof outer layer 160, in combination with the elastic-banded apertures 114, 118 and 120, serves to minimize the flow of liquids, such as urine and swimming pool water, between the inside and the outside of the swim diaper 110, particularly between absorbent terrycloth intermediate layer 140 and the outside environment.

A reusable swim diaper 10 of brief configuration (FIGS. 1 and 2) and a reusable swim diaper 110 of boxer short configuration (FIGS. 3 and 4) are specifically disclosed herein. Those are examples only, as the invention may be embodied in a variety of swim garment styles.

While particular embodiments of the invention have been illustrated and described herein, it is realized that numerous modifications and changes will occur to those skilled in the art. It is therefore to be understood that the appended claims are intended to cover all such modifications and changes as fall within the true spirit and scope of the invention.

What is claimed is:

1. A reusable swim diaper, comprising:

a main torso part having an extent defined by an elastic-banded torso-receiving aperture at its upper end, a pair of elastic-banded leg-receiving apertures at its lower end, and a crotch portion generally between said leg-receiving apertures, said main torso part including a bodyside inner layer of breathable wick-away fabric, said bodyside inner layer having an extent corresponding to the extent of said main torso part,

4

an absorbent terry cloth intermediate layer, and a waterproof outer layer, said waterproof outer layer having an extent corresponding to the extent of said main torso part;

said layers being made of materials which are capable of withstanding laundering and are restored to substantially their original conditions by laundering.

2. The reusable swim diaper of claim 1, wherein said absorbent terry cloth intermediate layer has an extent corresponding to said crotch portion.

3. The reusable swim diaper of claim 1, which further comprises a decorative fabric visible layer over said main torso part, said decorative fabric layer also made of a material which is capable of withstanding laundering and is restored to substantially its original condition by laundering.

4. The reusable swim diaper of claim 3, wherein said decorative fabric visible layer has an extent corresponding to the extent of said main torso part.

5. The reusable swim diaper of claim 3, wherein said decorative fabric visible layer has an extent greater than the extent of said main torso part so as to extend part way down the legs of a wearer.

6. The reusable swim diaper of claim 1, wherein said absorbent terry cloth intermediate layer has a fabric weight of approximately 640 g/m<sup>2</sup>.

7. The reusable swim diaper of claim 6, wherein said absorbent terry cloth intermediate layer has an extent corresponding to said crotch portion, and an area of approximately 200 cm<sup>2</sup>.

8. The reusable swim diaper of claim 6, wherein said absorbent terry cloth intermediate layer comprises two sublayers each having a fabric weight of approximately 320 g/m<sup>2</sup>.

9. The reusable swim diaper of claim 1, wherein said absorbent terry cloth intermediate layer comprises a polyester/polyamide fiber blend.

10. The reusable swim diaper of claim 6, wherein said absorbent terry cloth intermediate layer comprises a polyester/polyamide fiber blend.

11. The reusable swim diaper of claim 8, wherein said absorbent terry cloth intermediate layer comprises a polyester/polyamide fiber blend.

12. The reusable swim diaper of claim 1, wherein said bodyside inner layer comprises a knitted polyester fabric.

13. The reusable swim diaper of claim 1, wherein said waterproof outer layer comprises a coated woven nylon fabric.

14. The reusable swim diaper of claim 9, wherein said bodyside inner layer comprises a knitted polyester fabric.

15. The reusable swim diaper of claim 9, wherein said waterproof outer layer comprises a coated woven nylon fabric.

16. The reusable swim diaper of claim 14, wherein said waterproof outer layer comprises a coated woven nylon fabric.

17. A reusable swim diaper, comprising:

a main torso part having an extent defined by an elastic-banded torso-receiving aperture at its upper end, a pair of elastic-banded leg-receiving apertures at its lower end, and a crotch portion generally between said leg-receiving apertures, said main torso part including a bodyside inner layer of breathable wick-away fabric, said bodyside inner layer having an extent corresponding to the extent of said main torso part,

**5**

an absorbent terry cloth intermediate layer comprising a polyester/polyamide fiber blend and having a fabric weight of approximately 640 g/m<sup>2</sup>, and

a waterproof outer layer, said waterproof outer layer having an extent corresponding to the extent of said main torso part;

said layers being made of materials which are capable of withstanding laundering and are restored to substantially their original conditions by laundering.

**6**

**18.** The reusable swim diaper of claim **17**, wherein said absorbent terry cloth intermediate layer has an extent corresponding to said crotch portion, and an area of approximately 200 cm<sup>2</sup>.

**19.** The reusable swim diaper of claim **17**, wherein said absorbent terry cloth intermediate layer comprises two sub-layers each having a fabric weight of approximately 320 g/m<sup>2</sup>.

\* \* \* \* \*

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,678,094 B1  
APPLICATION NO. : 11/583367  
DATED : March 16, 2010  
INVENTOR(S) : Cannon et al.

Page 1 of 1

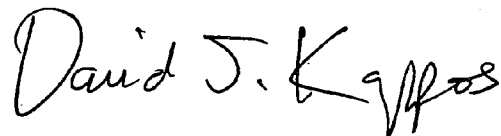
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 2, line 22, the words “order of” are deleted.

Column 2, lines 25-31, the entire paragraph is deleted.

Signed and Sealed this

Eighth Day of June, 2010

A handwritten signature in black ink that reads "David J. Kappos". The signature is written in a cursive, flowing style.

David J. Kappos  
*Director of the United States Patent and Trademark Office*